

ARNOLD ARBORETUM

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Summer Flowering Trees. Here in the north not many trees except Lindens can be grown which flower in summer. These are all valuable, however, for they add interest and variety to parks and gardens at the season when the flowers of trees and shrubs are not abundant. All the summer flowering trees here are interesting, and the flowers of some of them are conspicuous. After the Lindens the first of these trees to open its flowers is the Sorrel-tree (*Oxydendrum arboreum*). This tree is the only representative of a genus of the Heath Family and one of the few genera of eastern America trees which is not represented in eastern Asia. The Sorrel-tree is a common tree of the forests of the Appalachian Mountains from southwestern Pennsylvania southward; it grows also but less abundantly from southern Ohio and Indiana to northern Florida, southern Alabama and Mississippi and in eastern Louisiana. Growing under the most favorable conditions the *Oxydendrum* is a tree from fifty to sixty feet high, with a tall straight trunk sometimes twenty inches in diameter. The leaves are dark green, very lustrous and seven or eight inches long, and the bright scarlet of their autumn color is not surpassed by that of any other American tree. The leaves are pleasantly acidulous, a character to which the tree owes its vernacular name. The white flowers, which are shaped like those of an Andromeda, are erect on the branches of spreading or drooping clusters, and these are followed by pale capsular fruits which are conspicuous in contrast with the brilliant colors of the autumn foliage. Here in the north the Sorrel-tree begins to flower when only five or six feet high, and it is not probable that it will ever grow here to the size this tree attains in the rich "coves" found on the lower slopes of the high southern mountains in which several of

the trees of eastern North America grow to their greatest size. The Arboretum Sorrel-trees are planted among the Laurels (*Kalmia*) at the northern base of Hemlock Hill, and during the last two weeks have been covered with flowers.

Koelreuteria paniculata. This Chinese tree, which has been in bloom during the last ten days, is when in flower the most conspicuous of all the summer flowering trees which are hardy in this climate. It is a round-headed tree rarely more than thirty feet high, with large, compound, dark green leaves and large erect clusters of golden yellow flowers which are followed by great clusters of bladder-like pale fruits. This tree, which is hardy in Massachusetts, has been a good deal planted in this country, especially in the gardens of the Middle States. The *Koelreuteria* often appears in American nursery catalogues under the name of "Japanese Lacquer-tree," although it is not a native of Japan and has not lacquer-producing sap.

Maackia. Two species of this genus of the Pea Family were in flower during the last days of July. The better known of these trees, *M. amurensis*, is a native of eastern Siberia. It is a small tree with a slender trunk with smooth, lustrous, red-brown bark, small erect and spreading branches which form a rather flat-topped obconic head, and long, erect, narrow, terminal spikes of small white flowers. Botanically and geographically interesting, the chief value of this *Maackia* from the garden point of view is found in the fact that its flowers open at a time when flowers can only be seen here on a few trees. A second species, *Maackia hupehensis*, discovered by Wilson in central China, has been covered with flowers which are pale yellow and borne in rather shorter spikes. In early spring the silver gray hairs which thickly cover the unfolding leaves make this little tree conspicuous and interesting. The bark of *M. hupehensis* is dull grayish green and less beautiful than the bark of the Siberian tree.

Another eastern Asiatic tree of the Pea Family will bloom during the present month. This is the *Sophora* which, first sent to Europe from Japan where it had been cultivated perhaps for a thousand years, is called *japonica*, although it is not a Japanese tree but a native of northern China and Korea. Growing in Peking where this *Sophora* has been much planted, it is a large tree with a massive trunk often three feet in diameter covered with gray, deeply furrowed bark, and a round-topped head of large spreading branches, which seen from a little distance looks like that of a great Oak. Such trees have not grown in Europe where the *Sophora* was brought from Japan some hundred and fifty years ago, or in the United States where it has never been much planted and where no remarkable specimens exist. The leaves and young branches are green, and the small, pea-shaped, creamy white flowers are produced in great numbers in narrow terminal clusters erect on the branches, and are followed by nearly round pods much constricted between the seeds, as are the fruits of the other species of the genus *Sophora*. What is probably the largest and handsomest specimen of this tree in eastern Massachusetts is growing in the Public Garden of Boston. The Arboretum collection contains a specimen of the form of this tree with long drooping branches (var. *pendula*) which rarely if ever flowers, the form with erect branches (var. *pyramidalis*),

and the form with flowers tinged with pink (var. *rosea*). The Maackias and Sophoras are growing on the slope on the right hand side of Bussey Hill Road above the path which connects that road with the Meadow Road.

The Aralia Family supplies northern plantations with three handsome trees which flower in August. The most interesting of these three trees, possibly because it is still the least known in this country, is *Acanthopanax ricinifolium*, an inhabitant of the forests of Japan and Korea where it sometimes grows to the height of seventy or eighty feet and forms a massive trunk and great wide-spreading branches armed, like the stems of young trees, with numerous stout prickles. To the shape of the leaves, which somewhat resemble those of the plant which produces the fruit from which castor oil is obtained, this *Acanthopanax* owes its specific name. The leaves, which are nearly circular and more or less deeply five- or seven-lobed, and fifteen or sixteen inches in diameter, hang on long slender stalks. The small white flowers are arranged in compact, long-stemmed clusters which form a compound flat terminal panicle which varies from twelve to eighteen inches in diameter and is well raised above the leaves. In the early autumn the flowers are followed by small black and shining fruits. Of the trees growing in the Arboretum this *Acanthopanax* most departs in appearance from the trees of New England; and no other tree here is regarded with more curiosity. The largest specimen is growing by the side of the pond on the right hand side of the Meadow Road near its junction with the Bussey Hill Road; there is another large specimen in the mixed border plantation in the rear of the group of Viburnums near the junction of the Bussey Hill and Valley Roads. These trees have not before been more thickly covered with clusters of flower-buds.

Aralia spinosa is a common tree, growing usually in the neighborhood of streams in the region from western Pennsylvania to Missouri, and southward to northern Florida, Louisiana and eastern Texas. It is a slender tree thirty or thirty-five feet high with a stem rarely more than eight inches in diameter and wide-spreading branches furnished, like the young trunk, with stout scattered prickles. The leaves, which are clustered near the end of the branches, are from three to four feet long and about two and a half feet wide, on stems from eighteen to twenty inches in length which clasp the branches with their enlarged base, and are usually armed with slender prickles. The small, greenish white flowers appear in August in many-flowered umbels arranged in broad compound panicles three or four feet long which rise above the leaves singly or two or three together from the end of the branches. The small black fruit ripens in early autumn. This *Aralia* is now thoroughly established at the northern base of Hemlock Hill in the rear of the plantation of Laurels (*Kalmia*) and is spreading to a considerable distance from the original plant by means of underground stems from which new plants rise.

Aralia chinensis, so closely related to the American *Aralia* that it has sometimes been considered a geographical variety of that tree, appears in the Arboretum collection in several varieties. The best known of these varieties, a native of Manchuria and eastern Siberia (var. *mandschurica*), is a hardier plant at the north than the American spe-

cies and has been much more generally planted. In commercial nurseries it is often sold under the name of *Dimorpanthus mandschuricus*. Japanese and Chinese varieties of this *Aralia*, although less hardy than its Siberian representative, can be seen in the group of these plants near the junction of the Meadow and Bussey Hill Roads.

Rhus javanica, an eastern Asiatic Sumach which is perhaps better known as *Rhus Osbeckii* or *R. semialata*, is a good August flowering tree in New England. In this country it is rarely twenty feet high, with spreading branches which form a broad round-topped head of handsome, light green, pinnate leaves with a broad-winged petiole and rachis. The flowers are white in erect, long-branched, pyramidal clusters, ten or twelve inches long and standing well above the leaves. The fruit is globose, about a quarter of an inch in diameter, red, and in compact clusters. The leaves of few trees or shrubs turn in the autumn to a more brilliant scarlet. For its showy August inflorescence and the splendor of its autumn foliage this Sumach should find a place in the planting lists for northern gardens.

Evodias are small summer-flowering Asiatic trees of the Rue family, widely distributed in eastern Asia and found also in Madagascar and Australia. The species have pinnate leaves, white or pinkish unisexual flowers in small clusters terminal on the shoots of the year, and dry capsular fruit. Like the *Phellodendrons* to which *Evodia* is related, they are protected from the attacks of insects by the pungent aromatic oil with which the leaves abound. *Evodia* has been growing in the Arboretum since 1905 when Professor Jack brought the seeds of *E. Daniellii* from Korea. This handsome tree has flowered now for several years in the Arboretum. *E. hupehensis*, a common inhabitant of the forests of western Hupeh where Wilson found it growing to a larger size than the other Chinese species of this genus, is also established and flowers in the Arboretum.

Stewartia pseudo-camellia, another summer-flowering tree, was among the first plants to reach the United States direct from Japan, and before 1870 was distributed from the Parsons Nursery at Flushing, Long Island. It produces its pure white, cup-shaped flowers, which resemble those of a single *Camellia*, in August; the autumn color of the leaves is dark bronze purple, distinct from that of any other plant in the Arboretum and handsome and interesting; the smooth pale gray bark which separates in large pale plates adds, too, to the interest of this tree. There are two specimens on the upper side of Azalea Path.

A handsome dwarf Conifer. Among a large number of seedlings of the Carolina Hemlock (*Tsuga caroliniana*) raised at the Arboretum from seeds planted in 1881 two individuals are dwarf in habit. The smaller of these plants is now only ten feet high with a spread of branches of twelve feet, and the other is thirteen feet high with a spread of fifteen feet. They show no tendency to form a leader, and look as if they would continue to grow more rapidly in breadth than in height. In their wide-spreading and gracefully drooping branches they are more beautiful even than the well-known weeping form of *Tsuga canadensis* which has usually been considered the handsomest of dwarf conifers.

These Bulletins will now be discontinued until the autumn.